



Energy Modelling Initiative

Bringing the Tools to Support Canada's Energy Transition

Challenge

Achieving decarbonisation of the Canadian economy will require a profound transformation of Canada's complex energy systems. While all parts of energy production, transportation and use are inter-connected and driven by socio-economic factors, with deep ramifications into Canada's economy, it is already clear that extended electrification of the economy will be at the core of this transformation¹.

Canada lacks an independent institution/research coalition that can consistently advise stakeholders on addressing its unique challenges as it strives to achieve deep decarbonisation and extended electrification of its economy. Even though there is considerable expertise across Canada to examine isolated problems within this space, no regular mechanism exists, contrary to what is found in most OECD countries, that can bring that expertise together to address these issues in a holistic manner useful for policy makers and stakeholders.

There is no doubt that electrification of the economy represents a new territory. Robust evidence to inform policy design and decision-making is therefore needed to guide this transition in a way to ensure Canada's economic growth and international positioning. Establishing modelling/analytical capacity will strengthen our ability to take advantage of opportunities and mitigate risks in this transition for the whole of Canada, as noted in the *Generation Energy report*².

Long-term aspiration

Natural Resources Canada is working to establish a national electricity/energy systems modelling network that reflects the diverse needs and realities of the country and can inform electricity stakeholders on paths forward on electrification or other pressing energy-system inquiries. This network will focus primarily on the electricity system while recognizing its interactions with other sources of energy and the key role it can play for energy efficiency at a systemic level. The network should inform federal and provincial policy makers on the transition to a Clean Electric Future. The modelling network should use a common set of tools that is accessible to all electricity stakeholders.

While the initial focus would be on electrification and electricity usage as a service, there is a longer-term opportunity for this network to play a key role in broader modelling efforts related to Canada's energy systems as a whole. The network could inform the work of the Canadian Centre for Energy Information announced in Budget 2019, which will improve the quality and availability of data needed by the modelling community. The proposed network would also complement the work of ECCC's Expert Engagement Initiative on Clean Growth and Climate Change.

1. Langlois-Bertrand, S., Vaillancourt, K., Bahn, O., Beaumier, L. and Mousseau N. (2018). *Canadian Energy Outlook : Horizon 2050*. Institut de l'énergie Trottier and e3 Hub. Retrieved from <http://iet.polymtl.ca/energy-outlook/>

2. The Generation Energy Council. (2018). *La transition énergétique du Canada : Concrétiser notre avenir énergétique, ensemble*. Retrieved from <https://www.nrcan.gc.ca/20093>

Near-term opportunity

As a first step, Natural Resources Canada is catalysing a network of researchers working on electrification and energy issues to respond to the challenges of a clean electric future in a more robust, coordinated manner. Natural Resources Canada has partnered with an academic institution to convene a **dialogue** with Canada’s electricity system modelling community from July 2019 to March 2020. The intent of the dialogue is to provide the ideas that can serve as a foundation for the establishment of a sustained **network** of Canadian electricity system and electrification modellers and a **platform** to share tools and results.

Contact

Madeleine McPherson | Assistant Professor, Department of Civil Engineering, University of Victoria
mmcpherson@uvic.ca

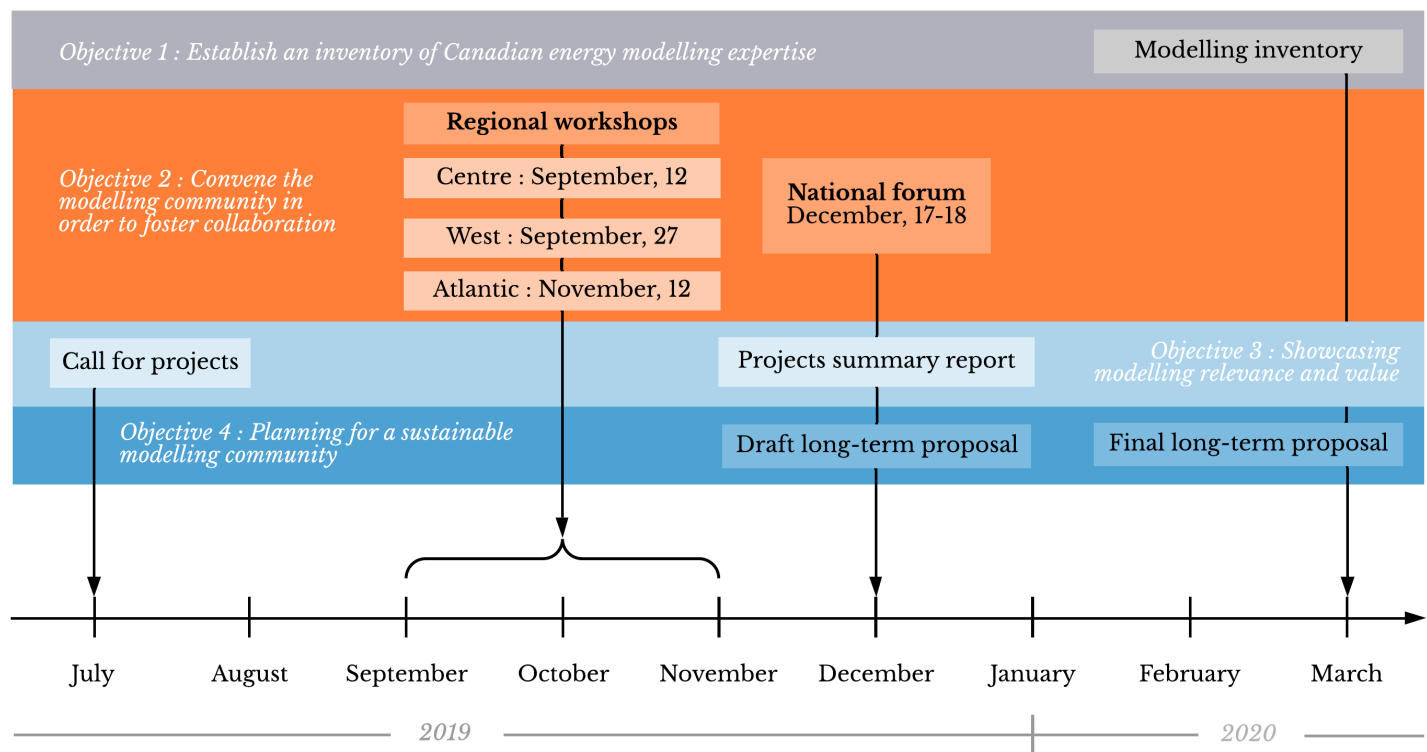
Normand Mousseau | Academic director, IET, Polytechnique Montréal and Professor of Physics, Université de Montréal
normand.mousseau@umontreal.ca

Louis Beaumier | Executive director, IET, Polytechnique Montréal
louis.beaumier@polymtl.ca

Moe S. Esfahlani | Project Management & Coordination
esfahlani@ucalgary.ca

Marie-Maude Roy | Edition & Communications
marie-maude.roy@umontreal.ca

Timeline



Electricity modellers want to collaborate with policy makers and utilities

An effective national electricity/energy system modelling network that reflects the diverse needs of the country and can inform electricity stakeholders on paths forward on electrification needs continued engagement with policy makers in provincial and federal governments, system planners in Canadian utilities and civil society organizations.

Dialogue organizers wish to extend you an invitation to participate in this initiative and associated activities. This participation will take many forms and they will get back to you about the possibilities. In the meanwhile, for more information please contact directly the organizers by email at info@emi-ime.ca or by visiting www.emi-ime.ca. They are looking to engage with as many interested parties as possible.